

F38 Series



Conductive Polymer, Miniature, Undertab



FEATURES

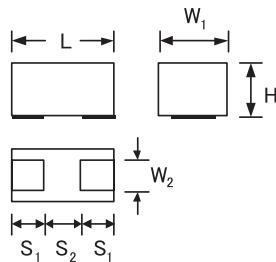
- Compliant to the RoHS2 directive 2011/65/EU
- SMD facedown
- Small and low profile

APPLICATIONS

- Smartphone
- Tablet PC
- Wireless module
- Portable game

CASE DIMENSIONS: millimeters (inches)

| Code | L | W ₁ | W ₂ | H | S ₁ | S ₂ |
|----------|--|--|----------------------------|----------------------------|----------------------------|----------------------------|
| M | 1.60 ^{+0.20} _{-0.10} (0.063 ^{+0.008} _{-0.004}) | 0.85 ^{+0.20} _{-0.10} (0.033 ^{+0.008} _{-0.004}) | 0.65±0.10 (0.026±0.004) | 0.80±0.10 (0.031±0.004) | 0.50±0.10 (0.020±0.004) | 0.60±0.10 (0.024±0.004) |
| S | 2.00 ^{+0.20} _{-0.10} (0.079 ^{+0.008} _{-0.004}) | 1.25 ^{+0.20} _{-0.10} (0.049 ^{+0.008} _{-0.004}) | 0.90±0.10 (0.035±0.004) | 0.80±0.10 (0.031±0.004) | 0.50±0.10 (0.020±0.004) | 1.00±0.10 (0.039±0.004) |

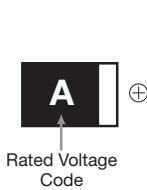


TECHNICAL SPECIFICATIONS

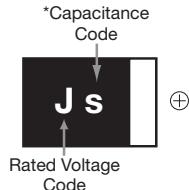
| Item | Performance Characteristics |
|--|--|
| Category Temperature Range | -55 to +105°C (Rated temperature: +85°C) |
| Capacitance Tolerance | ±20% (at 120Hz) |
| Dissipation Factor | Refer to next page |
| ESR (100kHz) | Refer to next page |
| Leakage Current | Refer to the table below Provided that • After 5 minute's application of rated voltage, leakage current at 105°C, 10 times or less than 20°C specified value |
| Capacitance Change by Temperature | +15% Max. (at +125°C) +10% Max. (at +85°C) -10% Max. (at -55°C) |
| Damp Heat (Steady State) | At 40°C, 90 to 95% R.H., 500 hours (No voltage applied) Capacitance Change Refer to next page (*1) Dissipation Factor 200% or less of initial specified value Leakage Current 300% or less of initial specified value |
| Temperature Cycles | At -55°C / +105°C, For 30 minutes each, 5 cycles Capacitance Change Refer to next page (*1) Dissipation Factor 200% or less of initial specified value Leakage Current 400% or less of initial specified value |
| Resistance to Soldering Heat | 10 seconds reflow at 240°C Capacitance Change Refer to next page (*1) Dissipation Factor 200% or less of initial specified value Leakage Current 300% or less of initial specified value |
| Surge | After application of surge voltage in series with a 1kΩ resistor at the rate of 30 seconds ON, 30 seconds OFF, for 1000 successive test cycles at 85°C, capacitors meet the characteristic requirements table below. Capacitance Change Refer to next page (*1) Dissipation Factor 200% or less of initial specified value Leakage Current 300% or less of initial specified value |
| Endurance | After 1000 hours' application of rated voltage in series with a 3Ω resistor at 85°C, capacitors meet the characteristic requirements table below. Capacitance Change Refer to next page (*1) Dissipation Factor 200% or less of initial specified value Leakage Current 400% or less of initial specified value |
| Shear Test | After applying the pressure load of 5N for 10±1 seconds horizontally to the center of capacitor side body which has no electrode and has been soldered beforehand on a substrate, there shall be found neither exfoliation nor its sign at the terminal electrode. 5N (0.51kg · f) For 10±1 seconds |
| Terminal Strength | Keeping a capacitor surface-mounted on a substrate upside down and supporting the substrate at both of the opposite bottom points 45mm apart from the center of capacitor, the pressure strength is applied with a specified jig at the center of substrate so that the substrate may bend by 1mm as illustrated. Then, there shall be found no remarkable abnormality on the capacitor terminals. R230 → 20 45 → 45 → 1mm |

MARKING

M CASE



S CASE



HOW TO ORDER

F38 **1A**
Type Rated Voltage

225
Capacitance Code

M
Tolerance
M = ±20%

M
Case Size
See table
above

□
Packaging

| Reel Dia (ϕ180) | Tape Width (mm) |
|--------------------|--------------------|
| A | B |

pF code: 1st two digits represent significant figures, 3rd digit represents multiplier (number of zeros to follow)



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CAPACITANCE AND RATED VOLTAGE RANGE (LETTER DENOTES CASE SIZE)

| Capacitance | | Rated Voltage | | | *Cap Code |
|-------------|------|---------------|-----------|----------|-----------|
| µF | Code | 4V (0G) | 6.3V (0J) | 10V (1A) | |
| 2.2 | 225 | | | M | - |
| 4.7 | 475 | | | M | - |
| 10 | 106 | | M | M | a |
| 22 | 226 | | M/S | S* | j |
| 33 | 336 | | S | | n |
| 47 | 476 | | M*/S | | s |
| 100 | 107 | S* | | | A |

Available Ratings

*Codes under development – subject to change

Please contact to your local AVX sales office when these series are being designed in your application.

RATINGS & PART NUMBER REFERENCE

| AVX Part Number | Case Size | Cap (µF) | Rated Voltage (V) | * ² Leakage Current (µA) | Dissipation Factor (%@120Hz) | ESR (mΩ@100kHz) | Ripple Current (mArms@100kHz, 20°C) | * ¹ ΔC/C (%) |
|-----------------|-----------|----------|-------------------|-------------------------------------|------------------------------|-----------------|-------------------------------------|-------------------------|
| 6.3 Volt | | | | | | | | |
| F380J106MMA | M | 10 | 6.3 | 10.0 | 8 | 500 | 224 | * |
| F380J226MMA | M | 22 | 6.3 | 13.9 | 10 | 500 | 224 | * |
| F380J226MSA | S | 22 | 6.3 | 13.9 | 10 | 200 | 474 | * |
| F380J336MSA | S | 33 | 6.3 | 20.8 | 10 | 200 | 474 | * |
| F380J476MSA | S | 47 | 6.3 | 29.6 | 10 | 200 | 474 | * |
| 10 Volt | | | | | | | | |
| F381A225MMA | M | 2.2 | 10 | 10.0 | 6 | 500 | 224 | * |
| F381A475MMA | M | 4.7 | 10 | 10.0 | 6 | 500 | 224 | * |
| F381A106MMA | M | 10 | 10 | 10.0 | 15 | 500 | 224 | * |

1: ΔC/C Marked “”

| Item | All Case (%) |
|------------------------------|--------------|
| Damp Heat, steady state | -20 to +30 |
| Radial change of temperature | ±20 |
| Resistance soldering heat | ±20 |
| Surge | ±20 |
| Endurance | ±20 |

*2: Leakage Current

After 5 minute's application of rated voltage,
leakage current at 20°C.

THE CORELATIONS AMONG RATED VOLTAGE, SURGE VOLTAGE AND DERATED VOLTAGE

| | | |
|---------------------------|-----|----|
| Rated Voltage (V) | 6.3 | 10 |
| 85°C Surge Voltage (V) | 8 | 13 |
| 105°C Derated Voltage (V) | 5 | 8 |

NOTICE: DESIGN, SPECIFICATIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE.